

Docket No. 1232-4785

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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TECH CENTER 2800

Applicant(s): Akira YOKOYAMA

Group Art Unit: 2873

Serial No.: 09/988,259

Examiner: Huy K. MAI

Filed: November 19, 2001

For: DRIVE TRANSMISSION DEVICE AND OPTICAL APPARATUS USING THE
SAME

AMENDMENT UNDER 37 C.F.R. § 1.114

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This amendment accompanies a Request for Continued Examination (RCE) and is
being filed pursuant to 37 C.F.R. §1.114.

Amendments to the Claims are reflected in the listing of claims which begins on
page 2 of this paper.

Remarks/Arguments begin on page 16 of this paper.

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (currently amended) A drive transmission device for transmitting drive of an actuator to a driven member, the drive transmission device comprising:
 - an input member which is driven by the actuator~~[[;]]~~, the input member having an input contact surface; and
 - an output member which transmits drive of the input member and drives the driven member~~[[;]]~~, the output member having an output contact surface;wherein the drive transmission device is switchable between a first state in which the drive of the input member is transmitted to the output member and a second state in which the drive of the input member is not transmitted to the output member,
 - and the input member contact surface and the output member contact surface are in contact with each other when the drive transmission device is in the first state and in the second state~~[[.]]~~, and
 - a contact pressure between the input contact surface and the output contact surface in the first state is larger than a contact pressure therebetween in the second state.
2. (Previously presented) The drive transmission device according to Claim 1, wherein the drive transmission device is an electromagnetic clutch for generating an electromagnetic force by supplying electricity, the electromagnetic clutch bringing the input member and the output member into contact with each other with contact pressure by the electromagnetic force corresponding to an electricity supply value in the first state.

3. (Previously presented) The drive transmission device according to Claim 1, wherein the drive transmission device is an electromagnetic clutch for generating an electromagnetic force by supplying electricity, the electromagnetic clutch bringing the input member and the output member into contact with each other with contact pressure by the electromagnetic force corresponding to an electricity supply value in the second state.
4. (Original) The drive transmission device according to Claim 1, wherein the actuator is a motor.
5. (canceled).
6. (currently amended) The drive transmission device according to Claim 51, wherein a lubricant to give slidability is applied onto the input contact surface and onto the output contact surface.
7. (Original) The drive transmission device according to Claim 6, wherein the lubricant is grease.
8. (Original) The drive transmission device according to Claim 51, wherein at least one of either the input contact surface or the output contact surface is treated with electrolytic plating or electroless plating to give slidability.

9. (Original) The drive transmission device according to Claim 8, wherein a lubricant to give slidability is applied onto the contact surface.
10. (Original) The drive transmission device according to Claim 9, wherein the lubricant is grease.
11. (currently amended) The drive transmission device according to Claim 5~~1~~, wherein an intermediate member to give slidability is provided between the input contact surface and the output contact surface.
12. (Original) The drive transmission device according to Claim 11, wherein the intermediate member is made of at least one of either Teflon or polyethylene.
13. (Currently Amended) ~~An optical apparatus~~ A zoom lens comprising
an optical member which is driven by a manual-drive member;
an actuator; and
a drive transmission device for transmitting drive of the actuator to the optical member,
wherein the drive transmission device comprises:
an input member driven by the actuator~~[[:]],~~ the input member having a an
input contact surface; and
an output member which transmits drive of the input member~~[[:]],~~ the output
member having an output contact surface;

wherein the drive transmission device is switchable between a first state in which the drive of the input member is transmitted to the output member and a second state in which the drive of the input member is not transmitted to the output member, and the input member contact surface and the output member contact surface are in contact with each other when the drive transmission device is in the first state and in the second state~~[[.]], and~~

a contact pressure between the input contact surface and the output contact surface in the first state is larger than a contact pressure therebetween in the second state.

14. (currently amended) The zoom lens optical apparatus according to Claim 13, wherein the drive transmission device is an electromagnetic clutch for generating an electromagnetic force by supplying electricity, the electromagnetic clutch bringing the input member and the output member into contact with each other with contact pressure by the electromagnetic force corresponding to an electricity supplying value in the first state.
15. (currently amended) The zoom lens optical apparatus according to Claim 13, wherein the optical member is a zoom lens unit.
16. (currently amended) The zoom lens optical apparatus according to Claim 13, wherein the optical member is a focus lens unit.
17. (currently amended) The zoom lens optical apparatus according to Claim 13, wherein the optical member is a stop unit.

18. (currently amended) The zoom lens optical apparatus according to Claim 13, wherein the actuator is a motor.
19. (canceled).
20. (currently amended) The zoom lens optical apparatus according to Claim ~~19~~13, wherein a lubricant to give slidability is applied onto the input contact surface and onto the output contact surface.
21. (currently amended) The zoom lens optical apparatus according to Claim 20, wherein the lubricant is grease.
22. (currently amended) The zoom lens optical apparatus according to Claim ~~19~~13, wherein at least one of either the input contact surface or the output contact surface is treated with electrolytic plating or electroless plating to give slidability.
23. (currently amended) The zoom lens optical apparatus according to Claim 22, wherein a lubricant to give slidability is applied onto the contact surface.
24. (currently amended) The zoom lens optical apparatus according to Claim 23, wherein the lubricant is grease.

25. (currently amended) The zoom lens optical apparatus according to Claim 1913,
wherein an intermediate member to give slidability is provided between the input
contact surface and the output contact surface.
26. (currently amended) The zoom lens optical apparatus according to Claim 25, wherein
the intermediate member is made of at least one of either Teflon or polyethylene.
27. (currently amended) The zoom lens optical apparatus according to Claim 14, further
comprising a controller for controlling an electricity supplying value for the
electromagnetic clutch so as to vary contact pressure between the input member and
the output member.
28. (currently amended) A zoom lens An optical apparatus comprising:
an optical member which is driven by a manual-drive member;
an actuator; and
a drive transmission device for transmitting drive of the actuator to the optical
member,
wherein the drive transmission device comprises:
an input member driven by the actuator[[:]], the input member having
an input contact surface; and
an output member which transmits drive of the input member[[:]], the
output member having an output contact surface;
a command unit which commands the optical member to be electrically
driven, the command unit outputting command information in accordance with
operation of a command operating member to the actuator; and

a controller which controls the drive transmission device in accordance with the command information from the command unit;

wherein the drive transmission device is switchable between a first state in which the drive of the input member is transmitted to the output member and a second state in which the drive of the input member is not transmitted to the output member,

and the input ~~member~~ contact surface and the output contact surface ~~member~~ are in contact with each other when the drive transmission device is in the first state and in the second state~~[[.]],~~ and

a contact pressure between the input contact surface and the output contact surface in the first state is larger than a contact pressure therebetween in the second state.

29. (currently amended) The zoom lens optical apparatus according to Claim 28, wherein the controller brings the drive transmission device into the first state when there is no command information from the command unit or when command information does not exceed a predetermined range, whereas the controller brings the drive transmission device into the second state when there is command information from the command unit or when command information exceeds the predetermined range.
30. (currently amended) The zoom lens optical apparatus according to Claim 28, wherein the drive transmission device is an electromagnetic clutch for generating an electromagnetic force by supplying electricity, the electromagnetic clutch bringing the input member and the output member into contact with each other with contact pressure by the electromagnetic force corresponding to an electricity supply value,

and the controller controls an electricity supply value for the clutch in accordance with command information from the command unit.

31. (currently amended) The zoom lens optical apparatus according to Claim 30, wherein the controller brings the electromagnetic clutch into a state of non-electricity supply when there is no command information from the command unit or when command information does not exceed a predetermined range, whereas, when there is command information from the command unit or when command information exceeds the predetermined range, the controller brings the electromagnetic clutch into a state of electricity supply and sets an electricity supply value for the electromagnetic clutch at an electricity supply value according to the command information.
32. (currently amended) The zoom lens optical apparatus according to Claim 28, wherein the command unit has an operating member operated for commanding the optical member to be electrically driven, and the actuator that outputs command information in accordance with operation of the operating member works at a speed corresponding to the command information that varies in accordance with an operational amount of the operating member.
33. (currently amended) The zoom lens optical apparatus according to Claim 28, wherein the optical member is a zoom lens unit.
34. (currently amended) The zoom lens optical apparatus according to Claim 28, wherein the optical member is a focus lens unit.

35. (currently amended) The zoom lens ~~optical apparatus~~ according to Claim 28, wherein the optical member is a stop unit.
36. (currently amended) The zoom lens ~~optical apparatus~~ according to Claim 28, wherein the command information is a zoom driving signal.
37. (currently amended) The zoom lens ~~optical apparatus~~ according to Claim 28, wherein the command information is a focus driving signal.
38. (currently amended) The zoom lens ~~optical apparatus~~ according to Claim 28, wherein the command information is a stop driving signal.
39. (currently amended) The zoom lens ~~optical apparatus~~ according to Claim 28, wherein the actuator is a motor.
40. (canceled).
41. (currently amended) The zoom lens ~~optical apparatus~~ according to Claim ~~40~~28, wherein a lubricant to give slidability is applied onto the input contact surface and onto the output contact surface.
42. (currently amended) The zoom lens ~~optical apparatus~~ according to Claim 41, wherein the lubricant is grease.

43. (currently amended) The zoom lens optical apparatus according to Claim 4028, wherein at least one of either the input contact surface or the output contact surface is treated with electrolytic plating or electroless plating to give slidability.
44. (currently amended) The zoom lens optical apparatus according to Claim 43, wherein a lubricant to give slidability is applied onto the contact surface.
45. (currently amended) The zoom lens optical apparatus according to Claim 44, wherein the lubricant is grease.
46. (currently amended) The zoom lens optical apparatus according to Claim 4028, wherein an intermediate member to give slidability is provided between the input contact surface and the output contact surface.
47. (currently amended) The zoom lens optical apparatus according to Claim 46, wherein the intermediate member is made of at least one of either Teflon or polyethylene.
48. (currently amended) The zoom lens optical apparatus according to Claim 30, wherein the controller controls an electricity supply value for the electromagnetic clutch so as to satisfy the relation:

$$Tk' < Td' < Tm$$

where Tm is a maximum driving torque occurring at the input member driven by the actuator; Tk' is driving-torque needed to drive the output member that drives the optical member through the manual-drive member, and Td' is engagement torque corresponding to contact pressure between the input member and the output member.

49. (currently amended) The zoom lens~~drive-transmission device~~ according to Claim 48, wherein the controller controls an electricity value for the electromagnetic clutch so as to satisfy the relation:

$$T_d' < T_{sy}'$$

where T_{sy}' is manual driving torque transmitted from the manual-drive member to the output member through manual operation when the optical member is electrically driven by the actuator, thereby allowing the optical member to be manually driven while being electrically driven.

50. (currently amended) The zoom lens~~optical apparatus~~ according to Claim 30, wherein, when the optical member is not electrically but manually driven, the controller controls an electricity supply value for the electromagnetic clutch so as to satisfy the relation:

$$0 \leq T_d'' < T_k'$$

where T_k' is driving torque needed to drive the output member that drives the optical member through the manual-drive member while being electrically driven, and T_d'' is engagement torque corresponding to contact pressure between the input member and the output member when manually driven.

51. (currently amended) The zoom lens~~optical apparatus~~ according to Claim 50, wherein the controller controls an electricity supply value for the electromagnetic clutch so as to satisfy the relation:

$$0 < T_d'' < T_k'$$

52. (currently amended) The zoom lens optical apparatus according to Claim 30, further comprising an adjusting member operated to vary engagement torque of the electromagnetic clutch, wherein the controller controls an electricity supply value for the electromagnetic clutch in accordance with operation of the adjusting member and varies the engagement torque when the optical member is manually operated.
53. (currently amended) The zoom lens optical apparatus according to Claim 30, wherein the controller controls an electricity supply value for the electromagnetic clutch in accordance with operation of the manual-drive member by a user.
54. (currently amended) A camera system ~~An optical apparatus comprising:~~
an optical member which is driven by a manual-drive member;
a zoom lens ~~an optical unit~~ which supports has the optical member;
a camera system ~~an imaging unit~~ to which the ~~optical unit~~ zoom lens is detachably mounted, the ~~imaging unit~~ camera having an image pickup device which picks up an object image from the zoom lens ~~optical unit~~;
an actuator; and
a drive transmission device for transmitting drive of the actuator to the optical member;
wherein the drive transmission device comprises:
an input member driven by the actuator~~[[;]],~~ the input member having an input contact surface;
an output member which transmits drive of the input member~~[[;]],~~ the output member having an output contact surface;

a command unit which commands the optical member to be electrically driven, the command unit outputting command information in accordance with operation of a command operating member to the actuator; and

a controller which controls the drive transmission device in accordance with the, command information from the command unit;

wherein the drive transmission device is switchable between a first state in which the drive of the input member is transmitted to the output member and a second state in which the drive of the input member is not transmitted to the output member,

and the input ~~member~~ contact surface and the output ~~member~~ contact surface are in contact with each other when the drive transmission device is in the first state and in the second state~~[[.]],~~ and

a contact pressure between the input contact surface and the output contact surface in the first state is larger than a contact pressure therebetween in the second state.

55. (currently amended) An optical-apparatus driving unit mounted or connected to a body of an optical apparatus including ~~an optical member~~ a zoom lens and a manual-operating member which manually drives the ~~optical member~~ zoom lens, the optical-apparatus driving unit comprising:

an actuator; and

a drive transmission device for transmitting drive of the actuator to the optical member,

wherein the drive transmission device comprises:

an input member driven by the actuator~~[[;]]~~ the input member having an input contact surface

an output member which transmits drive of the input member~~[[:]]~~, the output member having an output contact surface;

a command unit which commands the optical member to be electrically driven, the command unit outputting command information in accordance with operation of a command operating member to the actuator; and

a controller which controls the drive transmission device in accordance with the command information from the command unit;

wherein the drive transmission device is switchable between a first state in which the drive of the input member is transmitted to the output member and a second state in which the drive of the input member is not transmitted to the output member,

and the input ~~member~~contact surface and the output ~~member~~contact surface are ~~[[In]]~~ in contact with each other when the drive transmission device is in the first state and in the second state~~[[.]]~~, and

a contact pressure between the input contact surface and the output contact surface in the first state is larger than a contact pressure therebetween in the second state.

REMARKS

Applicant respectfully requests the entry and consideration of this preliminary amendment filed in connection with a Request for Continued Examination under 37 C.F.R. §1.114.

CONCLUSION

In the event that the Examiner believes that a telephone conference would help to expedite the prosecution of this case, the Examiner is cordially invited to call the undersigned at the number provided below.

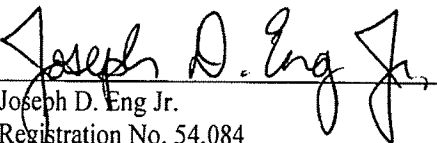
AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, Order No. 1232-4785. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: July 9, 2004

By:


Joseph D. Eng Jr.
Registration No. 54,084
(212) 758-4800 Telephone
(212) 751-6849 Facsimile

Correspondence Address:

MORGAN & FINNEGAN, L.L.P.
345 Park Avenue
New York, NY 10154-0053

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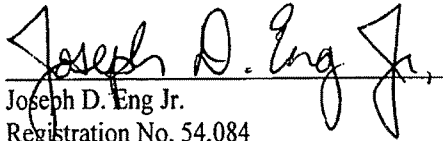
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Registration No. 54,084
(212) 758-4800 Telephone
(212) 751-6849 Facsimile

Correspondence Address:

MORGAN & FINNEGAN, L.L.P.
345 Park Avenue
New York, NY 10154-0053



Docket No. 1232-4285

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

REC

JUL 20 2004
TECH CENTER 2000

Applicant(s): Akira YOKOYAMA

Group Art Unit: 2873

Serial No.: 09/988,259

Examiner: Huy K. Mai

Filed: November 19, 2001

For: DRIVE TRANSMISSION DEVICE AND OPTICAL APPARATUS USING THE SAME

EXPRESS MAIL CERTIFICATE

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P.O. Box 1450
Alexandria, VA 22313-1450

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Date of Deposit: July 9, 2004

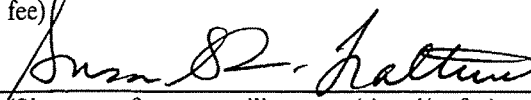
I hereby certify that the following attached paper(s) and/or fee

1. Request for Continued Examination;
2. Amendment under 37 CFR 1.114;
3. Information Disclosure Statement;
4. Form PTO 1449;
5. One cited reference;
6. Change of Correspondence Address;
7. Check of \$770.00 for RCE Fee;
8. Return postcard

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Susan Shen-Frattura

(Typed or printed name of person mailing papers(s) and/or fee)



(Signature of person mailing paper(s) and/or fee)

Correspondence Address:

MORGAN & FINNEGAN, L.L.P.
345 Park Avenue
New York, NY 10154-0053
(212) 758-4800 Telephone
(212) 751-6849 Facsimile



53 27123 \$
↑CUSTOMER NUMBER↑

**REQUEST
FOR
CONTINUED EXAMINATION (RCE)
TRANSMITTAL**

Subsection (b) of 35 U.S.C. §132, effective on May 29, 2000,
provides for continued examination of an utility or plant application
filed on or after June 8, 1995.
See The American Inventors Protection Act of 1999 (AIPA)

Application No.	09/988,259
Filing Date	November 19, 2001
First Named Inventor	Akira YOKOYAMA
Group Art Unit	2873
Examiner Name	Huy Kim MAI
Atty Docket No.	1232-4785

This is a Request for Continued Examination (RCE) under 37 C.F.R. §1.114 of the above-identified application.
NOTE: 37 C.F.R. §1.114 is effective on May 29, 2000. If the above-identified application was filed prior to May 29, 2000, applicant may wish to consider filing a continued prosecution application (CPA) under 37 C.F.R. §1.53(d) (PTO/SB/29) instead of a RCE to be eligible for the patent term adjustment provisions of the AIPA. See Changes to Application Examination and Provisional Application Practice, Interim Rule, 65 Fed. Reg. 14865 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office 47 (Apr. 11, 2000), which established RCE practice.

1. **Submission under 37 C.F.R. §1.114**

- a. ☐ Previously submitted
- i. ☐ Consider the amendment(s)/reply under 37 C.F.R. §1.116 previously filed on _____.
(Any unentered amendment(s) referred to above will be entered).
- ii. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____.
iii. ☐ Other:
- b. Enclosed
- i. ☒ Amendment/Reply
- ii. ☐ Affidavit(s)/Declaration(s)
- iii. ☒ Information Disclosure Statement (IDS)
- iv. Other: Form PTO 1449 and 1 reference

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2. **Miscellaneous**

- a. ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. §1.103(c) for a period of ____ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. §1.17(i) required)
- b. Other:

3. **Fees**

- The RCE fee under C.F.R. §1.17(e) is required by 37 C.F.R. §1.114 when the RCE is filed
- a. ☐ The Director is hereby authorized to charge the following fees, or credit any overpayments, to Deposit Account No. 13-4500.
- i. ☐ RCE fee required under 37 C.F.R. §1.17(e)
- ii. ☐ Extension of time fee (37 C.F.R. §§1.136 and 1.17)
- iii. ☐ Other
- b. ☒ Check in the amount of \$770.00 enclosed.
- c. ☒ The Director is hereby authorized to charge any additional fees, or credit any overpayments, to Deposit Account No. 13-4500 Order No. 1232-4785

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	Joseph D. Eng Jr.	Reg. No. (Atty/Agent)	54,084
Signature	Joseph D. Eng Jr.	Date	July 9, 2004